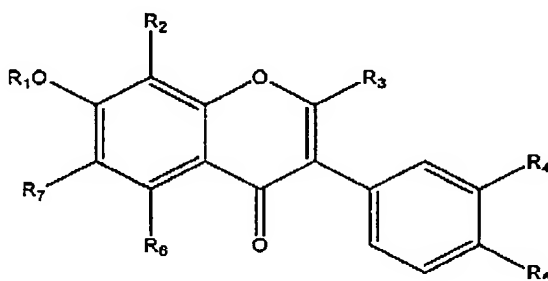


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LISTING OF THE CLAIMS

The following listing of claims will replace all prior versions and listing of claims in the application. For the Examiner's convenience a complete listing of all claims incorporating the amendments made herein is attached as Appendix A.

1. (Currently Amended) A method for inhibiting ALDH-2 comprising contacting ALDH-2 with a compound of Formula I



Formula I

wherein:

R₁ is selected from the group consisting of hydrogen, carboxy, halo, branched or straight chain unbranched (C₁-C₆)haloalkyl, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkylcarbonyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocycetyl, and heterocycyloxy, heterocycylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₂ is selected from the group consisting of hydrogen and alkoxy;

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R₃ is selected from the group consisting of hydrogen, C₁-C₆ alkoxycarbonyl, carboxy and sugar;

R₄ is selected from the group consisting of hydrogen and hydroxy~~hydroxide~~;

R₅ is selected from the group consisting of hydrogen, carboxy, hydroxy, amino, halo, branched or straight chain ~~unbranched~~ (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₆ is selected from the group consisting of hydrogen and hydroxy~~hydroxide~~; and

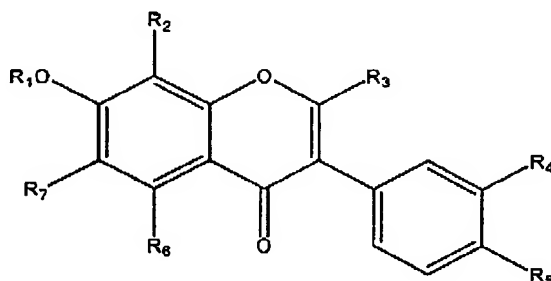
R₇ is selected from the group consisting of hydrogen, and halogen, ~~and C₁-C₆ alkoxy~~
with the proviso that R₅ cannot be hydroxy when R₁, R₂, R₃, R₄, R₆, and R₇ are all hydrogen.

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2. (Currently Amended) A method for inhibiting ALDH-2 comprising contacting ALDH-2 with a compound of Formula I



Formula I

wherein:

R₁ is selected from the group consisting of hydrogen, carboxy, halo, branched or straight chain ~~unbranched~~ (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, (C₅-C₁₀)carboxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₂ is selected from the group consisting of hydrogen and alkoxy;

R₃ is selected from the group consisting of hydrogen, C₁-C₆ alkoxycarbonyl, carboxy and sugar;

R₄ is selected from the group consisting of hydrogen and hydroxy~~hydroxide~~;

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R₅ is selected from the group consisting of hydrogen, carboxy, halo, amino, branched or straight chain ~~unbranched~~-(C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di(C₁-C₃)alkylaminocarbonyl

R₆ is selected from the group consisting of hydrogen and hydroxy~~hydroxide~~; and

R₇ is selected from the group consisting of hydrogen, halogen, and C₁-C₆ alkoxy.

3. (Currently Amended) The method of claim 1, wherein R₅ is hydroxy~~OH~~ or NH₂~~amino~~.

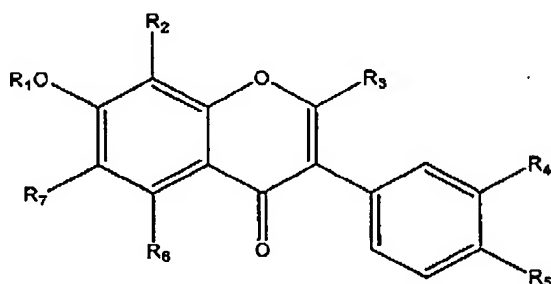
4. (Original) The method of claim 2, wherein R₁ is a straight chain alkyl.

5. (Currently Amended) The method of claim 42, wherein R₁ ~~the straight chain alkyl~~ is (C₁-C₆)hydroxyalkyl or (C₅-C₁₀)carboxyalkyl ~~selected from the group consisting of~~-(CH₂)_n-OH with 2 ≤ n ≤ 6, (CH₂)_n-COOH with 5 ≤ n ≤ 10, and (CH₂)_n-NH₂ with n ≥ 4.

6. (Original) The method of claim 1, wherein the ALDH-2 is human ALDH-2.

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7. (Currently Amended) A method of modulating alcohol consumption in a mammal comprising administering a compound of Formula I



Formula I

wherein:

R₁ is selected from the group consisting of hydrogen, carboxy, halo, branched or straight chain unbranched (C₁-C₆)haloalkyl, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkylcarbonyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, ~~heterocyclyl~~, and heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₂ is selected from the group consisting of hydrogen and alkoxy;

R₃ is selected from the group consisting of hydrogen, (C₁-C₆) alkoxycarbonyl, carboxy and sugar,

R₄ is selected from the group consisting of hydrogen and hydroxyhydroxide;

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R₅ is selected from the group consisting of hydrogen, carboxy, hydroxy, amino, halo, branched or straight chain unbranched-(C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₆ is selected from the group consisting of hydrogen and hydroxy~~hydroxide~~; and

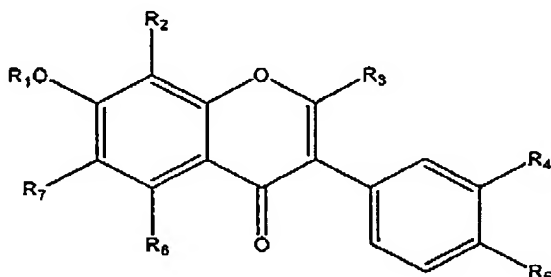
R₇ is selected from the group consisting of hydrogen, and ~~halogen, and C₁-C₆alkoxy,~~

with the proviso that R₅ cannot be hydroxy when R₁, R₂, R₃, R₄, R₆, and R₇ are all hydrogen

in an amount effective to increase a concentration of an aldehyde formed during catabolism of a neurotransmitter.

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8. (Currently Amended) A method of modulating alcohol consumption in a mammal comprising administering a compound of Formula I



Formula I

wherein:

R₁ is selected from the group consisting of hydrogen, carboxy, halo, branched or straight chain unbranched (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, (C₅-C₁₀)carboxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₂ is selected from the group consisting of hydrogen and alkoxy;

R₃ is selected from the group consisting of hydrogen, (C₁-C₆) alkoxycarbonyl, carboxy and sugar;

R₄ is selected from the group consisting of hydrogen and hydroxyhydroxide;

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R₅ is selected from the group consisting of hydrogen, carboxy, halo, amino, branched or straight chain unbranched-(C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocycliloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl

R₆ is selected from the group consisting of hydrogen and hydroxy~~hydroxide~~; and

R₇ is selected from the group consisting of hydrogen, halogen, and C₁-C₆ alkoxy,

in an amount effective to increase a concentration of an aldehyde formed during catabolism of a neurotransmitter.

9. (Original) The method of claim 7, wherein the mammal is a human.
10. (Original) The method of claim 7, wherein the neurotransmitter is serotonin or dopamine.
11. (Original) The method of claim 7, wherein the aldehyde is 5-hydroxyindoleacetaldehyde or 3,4-dihydroxyphenylacetaldehyde.

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12. (Original) The method of claim 7, wherein the compound does not inhibit monoamine oxidase.

13. (Currently Amended) The method of claim 7, wherein R_5 is hydroxy~~OH~~ or NH₂~~amino~~.

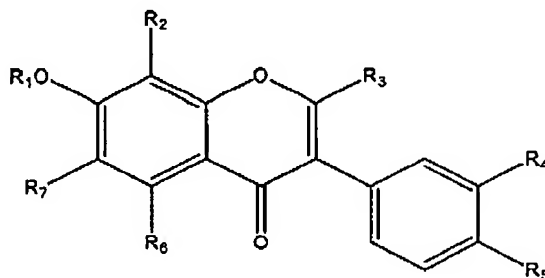
14. (Original) The method of claim 8, wherein R_1 is a straight chain alkyl.

15. (Original) The method of claim 148, wherein R_1 ~~the straight chain alkyl~~ is (C₁-C₆)hydroxyalkyl or (C₅-C₁₀)carboxyalkyl~~selected from the group consisting of (CH₂)_n-OH with 2 ≤ n ≤ 6, (CH₂)_n-COOH with 5 ≤ n ≤ 10, and (CH₂)_n-NH₂ with n ≥ 4.~~

16. (Original) The method of claim 7, wherein the compound is administered intraperitoneally, intramuscularly or orally.

17. (Currently Amended) A method for identifying a compound that modulates ALDH-2 comprising the steps of:

i) providing a compound of Formula I



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Formula I

wherein:

R₁ is selected from the group consisting of hydrogen, carboxy, halo, amino, branched or straight chain unbranched-(C₁-C₆)haloalkyl, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkylcarbonyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, ~~heterocyclyl~~, and heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₂ is selected from the group consisting of hydrogen and alkoxy;

R₃ is selected from the group consisting of hydrogen, (C₁-C₆) alkoxycarbonyl, carboxy and sugar;

R₄ is selected from the group consisting of hydrogen and hydroxy~~hydroxide~~;

R₅ is selected from the group consisting of hydrogen, carboxy, hydroxy, amino, halo, branched or straight chain unbranched-(C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

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R_6 is selected from the group consisting of hydrogen and ~~hydroxy~~hydroxide; and

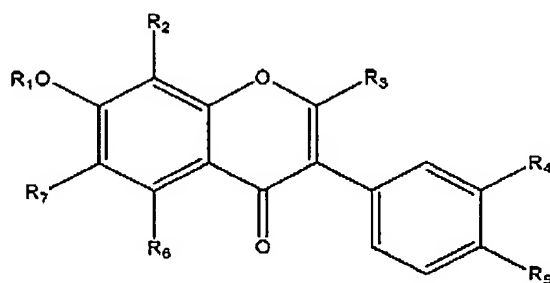
R_7 is selected from the group consisting of hydrogen ~~and~~, halogen, and ~~C_1 - C_6 alkoxy~~;

with the proviso that R_3 cannot be hydroxy when R_1 , R_2 , R_3 , R_4 , R_6 , and R_7 are all hydrogen

- ii) contacting ALDH-2 with the compound;
- iii) assaying the ability of the compound to modulate ALDH-2 activity; and
- iv) selecting a compound that modulates ALDH-2 activity as a modulator of ALDH-2 activity.

18. (Currently Amended) A method for identifying a compound that modulates ALDH-2 comprising the steps of:

- i) providing a compound of Formula I



Formula I

wherein:

R_1 is selected from the group consisting of hydrogen, carboxy, halo, amino, branched or straight chain ~~unbranched~~ (C_1 - C_6)alkyl, (C_1 - C_6)haloalkyl, (C_2 - C_6)alkenyl, (C_3 - C_6)alkadienyl, (C_1 - C_6)alkoxy, (C_3 - C_6)cycloalkoxy, (C_1 - C_6)haloalkoxy, (C_3 - C_6)cyclohaloalkoxy, (C_2 - C_6)alkynyloxy, (C_1 - C_6)alkoxy(C_1 - C_6)alkyl, (C_3 - C_6)cycloalkoxyalkyl, (C_1 - C_6)alkoxy(C_3 -

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C₆cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, (C₅-C₁₀)carboxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₂ is selected from the group consisting of hydrogen and alkoxy;

R₃ is selected from the group consisting of hydrogen C₁-C₆ alkoxycarbonyl, carboxy and sugar;

R₄ is selected from the group consisting of hydrogen and hydroxyhydroxide;

R₅ is selected from the group consisting of hydrogen, carboxy, halo, amino, branched or straight chain unbranched (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl

R₆ is selected from the group consisting of hydrogen and hydroxyhydroxide; and

R₇ is selected from the group consisting of hydrogen, halogen, and C₁-C₆ alkoxy;

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- ii) contacting ALDH-2 with the compound;
- iii) assaying the ability of the compound to modulate ALDH-2 activity; and
- iv) selecting a compound that modulates ALDH-2 activity as a modulator of ALDH-2 activity.

19. (Original) The method of claim 17, wherein the modulation is inhibition.

20. (Original) The method of claim 17, wherein the compound is further capable of increasing a concentration of an aldehyde.

21. (Original) The method of claim 20, wherein the aldehyde is 5-hydroxyindoleacetaldehyde or 3,4-dihydroxyphenylacetaldehyde.

22. (Original) The method of claim 17, wherein the compound does not inhibit monoamine oxidase.

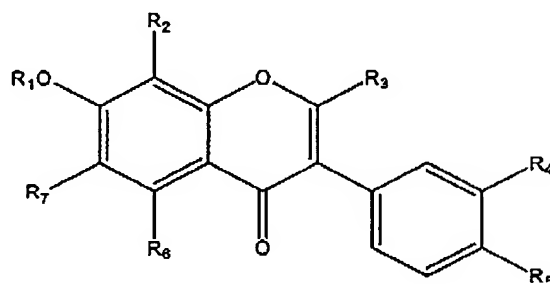
23. (Currently Amended) The method of claim 17, wherein R₃ is hydroxyOH or NH₂amino.

24. (Original) The method of claim 18, wherein R₁ is a straight chain alkyl.

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25. (Currently Amended) The method of claim 2418, wherein ~~R₁ the straight chain alkyl is (C₁-C₆)hydroxyalkyl or (C₅-C₁₀)carboxyalkyl selected from the group consisting of (CH₂)_n-OH with 2 ≤ n ≤ 6, (CH₂)_n-COOH with 5 ≤ n ≤ 10, and (CH₂)_n-NH₂, with n ≥ 4.~~

26. (Currently Amended) A compound for inhibiting ALDH-2 comprising Formula I



Formula I

wherein:

R₁ is selected from the group consisting of hydrogen, carboxy, halo, amino, branched or straight chain unbranched-(C₁-C₆)haloalkyl, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkylcarbonyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, ~~heterocyclyl~~, and heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₂ is selected from the group consisting of hydrogen and alkoxy;

~~R₃ is selected from the group consisting of hydrogen, C₁-C₆alkoxycarbonyl, carboxy and sugar;~~

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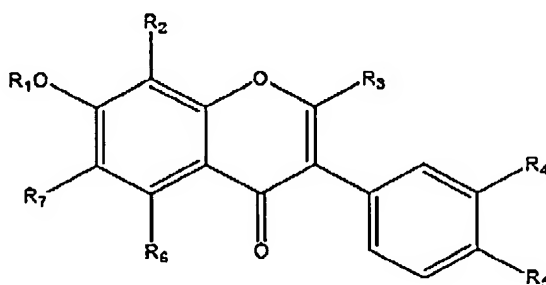
R_4 is selected from the group consisting of hydrogen and hydroxyhydroxide;

R_5 is selected from the group consisting of hydrogen, carboxy, hydroxy, halo, amino, branched or straight chain unbranched (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocycliloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R_6 is selected from the group consisting of hydrogen and hydroxyhydroxide; and

R_7 is selected from the group consisting of hydrogen, and halogen, and C₁-C₆alkoxy
with the proviso that R_5 cannot be hydroxy when R_1 , R_2 , R_3 , R_4 , R_6 , and R_7 are all hydrogen.

27. (Currently Amended) A compound for inhibiting ALDH-2 comprising Formula I



Formula I

wherein:

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R₁ is selected from the group consisting of hydrogen, carboxy, halo, amino, branched or straight chain ~~unbranched~~-(C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, (C₂-C₁₀)carboxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl;

R₂ is selected from the group consisting of hydrogen and alkoxy;

R₃ is selected from the group consisting of hydrogen, C₁-C₆ alkoxycarbonyl, carboxy and sugar;

R₄ is selected from the group consisting of hydrogen and hydroxyhydroxide;

R₅ is selected from the group consisting of hydrogen, carboxy, halo, amino, branched or straight chain ~~unbranched~~-(C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₃-C₆)alkadienyl, (C₁-C₆)alkoxy, (C₃-C₆)cycloalkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)cyclohaloalkoxy, (C₂-C₆)alkynyloxy, (C₁-C₆)alkoxy(C₁-C₆)alkyl, (C₃-C₆)cycloalkoxyalkyl, (C₁-C₆)alkoxy(C₃-C₆)cycloalkyl, (C₁-C₆)alkylcarbonyl, (C₃-C₆)cycloalkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₄-C₆)alkoxycarbonylalkyl, (C₁-C₆)hydroxyalkyl, substituted or unsubstituted phenyl, phenyl(C₁-C₆)alkyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl, wherein substituents are from one to four and are selected from the group consisting of halo, aminocarbonyl, aminothiocarbonyl, carboxy, formyl, hydroxy, amino, carbamoyl, (C₁-C₃)alkyl, (C₁-C₃)haloalkyl, (C₁-C₃)alkoxy, (C₁-C₃)haloalkoxy, (C₁-C₃)alkylamino, di(C₁-C₃)alkylamino, (C₁-C₂)alkoxy(C₁-C₂)alkyl, (C₁-C₂)alkylamino(C₁-C₂)alkyl, di(C₁-C₂)alkylamino(C₁-C₂)alkyl, (C₁-C₃)alkylcarbonyl, (C₁-C₃)alkoxycarbonyl, (C₁-C₃)alkylaminocarbonyl, and di (C₁-C₃)alkylaminocarbonyl

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R_6 is selected from the group consisting of hydrogen and ~~hydroxy~~hydroxide; and

R_7 is selected from the group consisting of hydrogen, halogen, and C_1 - C_6 alkoxy.

28. (Currently Amended) The compound of claim 26, wherein R_5 is ~~hydroxy~~OH or ~~NH₂~~amino.

29. (Original) The compound of claim 27, wherein R_1 is a straight chain alkyl.

30. (Currently Amended) The compound of claim ~~29~~27, wherein R_1 ~~the straight chain alkyl is~~ (C_1-C_6) hydroxyalkyl or (C_5-C_{10}) carboxyalkyl ~~selected from the group consisting of~~ $(CH_2)_n$ -OH with $2 \leq n \leq 6$, $(CH_2)_n$ -COOH with $5 \leq n \leq 10$, and $(CH_2)_n$ -NH₂ with $n \geq 4$.

31. (Original) The compound of claim 26, wherein the compound further inhibits alcohol consumption in a mammal.

32. (Original) The compound of claim 31, wherein the mammal is a human.

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